REMARKS

Entry of the foregoing and reexamination and reconsideration of the application identified in caption as amended, pursuant to and consistent with the Rules of Practice in Patent Cases, and in light of the remarks which follow, are respectfully requested.

By the present amendment claims 1, 11, 17-20, 25, and 31 have been amended, so that claims 1-32 remain pending. The specification has been amended at paragraphs **[0008]**, **[0009]**, **[0017]**, **[0020]**, **[0025]**, **[0033]**, **[0054]**, **[0056]-[0063]**, **[0065]**, **[0067]** (including Table 1), and **[0069]** to incorporate the correct usage of trademarks. The specification has also been amended at paragraphs **[0014]** and **[0017]** to include subject matter recited in claims 18, 19, and 21, as originally filed. No new matter has been added by these amendments.

The disclosure stands objected to for various informalities. These objections are respectfully traversed.

In particular, the Examiner objects to the phrase "copolyester-polycarbonate resin including at least a dihydric phenol constituent and an acid dichloride constituent," as used at page 10, lines 18-19, of the specification. The basis for this objection is the Examiner's belief that it is not clear how a polymer comprises two compounds having, respectively, two OH groups and two chloride groups. Applicants respectfully disagree. The copolyester-polycarbonate resin of the present invention is described in the specification using language that is consistent with International Union of Pure and Applied Chemistry ("IUPAC") source-based nomenclature for copolymers. See, e.g., Ring et al., "Source-Based Nomenclature for Copolymers (Recommendations 1985)," Pure Appl. Chem. 57:1428-1440 (1985) ("Ring") (attached hereto as **Exhibit A**). Thus, one of ordinary skill in the art would recognize that, according to established principles of organic chemistry, the "dihydric phenol constituents" react with the "acid dichloride constituents" to yield the copolyester-polycarbonate resins of the present invention.

The Examiner also objects to the disclosure (at page 10, line 30, to page 11, line 24) that the copolyester-polycarbonate resin includes a "polymer chain represented by the following formula: $(X\bullet Y\bullet Z\bullet T)_n$ where: X is a compound . . . Y is a compound . . . Z is a compound . . . T is a compound . . . ." The Examiner asserts that it is not clear how the polymer chain comprises individual compounds. Applicants respectfully disagree. Consistent with applicants' position stated above, one of ordinary skill in the art would recognize that the formulaic expression of the copolyester-polycarbonate resin of the present

invention indicates that compounds X, Y, Z, and T are constituent compounds that react together to form the copolyester-polycarbonate resin. For example, one of ordinary skill in the art would recognize that the inclusion of compound T (i.e., CCl_2O) (also known in the art as phosgene) as a constituent monomer will provide carbonate linkages, thus the use of the term "polycarbonate" is appropriate. One of ordinary skill in the art would also recognize that the use of conventional acid dichlorides such as terephthaloyl dichloride (i.e., compound X) will result in ester linkages, thus the use of the term "copolyester" is appropriate.

The Examiner further objects to the list of examples of the copolyester-polycarbonate resin of the present invention, as described in paragraph **[0030]**, at page 12, lines 7-16, of the specification. The Examiner's position is that it is not clear how copolymers comprise individual compounds. Applicants respectfully disagree. Consistent with applicants' above arguments, one of ordinary skill in the art would recognize that the listed compounds are constituents that react together under well-established principles of organic chemistry to result in the copolyester-polycarbonate resin of the present invention.

The Examiner also objects to the specification at page 12, lines 7-18, for disclosing that the copolyester-polycarbonate resin can be one of the six listed polymers. In particular, the Examiners states that all six of the listed polyesters refer to the same polymer, but do not represent six different polymers. Applicants respectfully disagree with this ground for objection. Each of the six descriptions of the copolyester-polycarbonate resin of the present invention is accurate under established organic chemistry nomenclature guidelines. Thus, one of ordinary skill in the art would readily understand the meaning of the six listed copolyester-polycarbonate resins.

The Examiner further objects to the specification inasmuch as it includes trademarks that are not capitalized, do not include trademark symbols, and/or do not include generic descriptive terminology. The specification has been amended to incorporate the Examiner's suggestions. The amendments do not constitute new matter.

For the foregoing reasons, and in view of the amendments to the specification, applicants respectfully submit that the objections to the specification for informalities are improper and should be withdrawn.

The specification stands objected to under 37 CFR § 1.75(d)(1) for failing to provide proper antecedent basis for the subject matter of claims 8, 11, 17-19, 21, 29, and 30. These objections are respectfully traversed.

Claim 11 has been amended to recite the lower limit of the dry thickness of the interfacial adhesive layer as being "50" Ångstroms. Support for this amendment can be found in the specification at page 12, lines 19-20.

Regarding claim 17, applicants respectfully disagree that the term "metal free phthalocyanine" lacks antecedent basis in the specification. The specification (at page 13, lines 31-32) specifically discloses that the charge generating binder layers may include a photoconductive material such as "metal free phthalocyanine." Nevertheless, claim 17 has been amended to recite the list of photoconductive materials as described in the specification in paragraph **[0035]**, at page 13, line 30, to page 14, line 2.

Claim 18 has been amended to make it clear that the adhesive strength measurement refers to the adhesive strength of the "imaging member" rather than the "interfacial adhesive layer." Support for this amendment can be found in the specification at page 24, line 27, to page 25, line 16. The specification has been amended at paragraph **[0014]** to recite that, in one embodiment, "the imaging member has an adhesive strength of between about 5.0 and about 30.0 g/cm, as measured using a reverse peel test." Support for this amendment is found in claim 18, as originally filed.

Claim 19 has been amended to make it clear that the 90-degree normal peel test measures "the adhesive strength between the charge transport layer and the charge generating layer" of the imaging member of the present invention. Support for this amendment can be found in the specification at page 25, lines 19-20. The specification has been amended at paragraph **[0014]** to recite that, in one embodiment, "the adhesive strength between the charge transport layer and the charge generating layer of the imaging member is at least 100 g/cm, as measured using a 90-degree normal peel test." Support for this amendment is found in claim 19, as originally filed.

Regarding claim 21, the specification has been amended at paragraph **[0017]**, page 6, line 16, to include "a plate" as an example of a configuration of the electrically conductive substrate. Support for this amendment is found in claim 21, as originally filed. Further, the recitation of "a plate" is supported by the use of the term "and the like" in the specification at page 6, line 17. The specification makes it clear that the conductive substrates specifically named in the specification (e.g., cylinder, sheet, scroll, flexible web, endless flexible belt) are just examples of the various different configurations of rigid or flexible conductive substrates that can be used in the present invention. Further, in discussing the general state of the art, the specification specifically refers to an electrophotographic

substrate (i.e., an electrostatically charged "support" or "substrate support") as a "plate" (page 1, lines 8-11). In view of this discussion, one of ordinary skill in the art would readily recognize that the term "and the like" as used at page 6, line 17, of the specification would include a "plate."

As to claim 30, antecedent basis is found in the specification at page 20, lines 17-19, which specifically discloses the use of a "slot die coating procedure" for applying the interfacial adhesive layer of the present invention.

For the foregoing reasons, and in view of the amendments to the claims and specification, applicants respectfully request that the objections to the specification for lack of proper antecedent basis be withdrawn.

Claims 2-8, 17, 18, 20, 26-29, 31, and 32 stand rejected under 35 U.S.C. § 112, second paragraph, for indefiniteness. This rejection is respectfully traversed.

Regarding claims 2 and 26, the Examiner contends that the phrase "copolyester-polycarbonate resin comprises a dihydric phenol constituent and an acid dichloride constituent" is indefinite because it is not clear how a polymer comprises a compound having two OH groups and a compound having two chloride groups. For the reasons already stated above in response to the related informality objection, applicants respectfully disagree.

With respect to claims 5 and 31, the Examiner asserts that the phrase "polymer chain represented by the following formula: $(X \bullet Y \bullet Z \bullet T)_n$ where: X is a compound . . . Y is a compound . . . Z is a compound . . . T is a compound . . . " is indefinite because it is not clear how the polymer chain comprises individual compounds. For the reasons already stated above in response to the related informality objection, applicants respectfully disagree.

In regard to claims 8 and 29, the Examiner contends that the phrase listing the six copolyester-polycarbonate resins of the present invention is indefinite, because it is not clear how copolymers comprise individual compounds. As already discussed above in regard to the corresponding informality objection, one of ordinary skill in the art would readily recognize that the "individual compounds" or constituents identified in claims 8 and 29 will react together (under established principles of organic chemistry) to form a copolyester-polycarbonate resin of the present invention. The Examiner has also noted "that all six named polymers listed in the Markush groups recited in claims 8 and 29 refer to the same polymer" (at page 6, lines 3-7, of the March 21, 2003, Office Action). However, there is no

prohibition against using synonymous language in a Markush group. In particular, the Manual for Patent Examining Procedure ("MPEP") states the following:

> [T]he double inclusion of an element by members of a Markush group is not, in itself, sufficient basis for objection to or rejection of claims. Rather the facts in each case must be evaluated to determine whether or not the multiple inclusion of one or more elements in a claim renders that claim indefinite.

MPEP § 2173.05(h), at 2100-207 (Rev. 1, Feb. 2003). In the present case, it would be clear to one of ordinary skill in the art that the six copolyester-polycarbonates listed in the Markush groups of claims 8 and 29 contain synonymous monomeric constituent compounds that react together to form the copolyester-polycarbonates of the present invention. Thus, the Markush groups of claims 8 and 29 do not render the claims indefinite.

Claim 17 has been amended to insert an additional conjunction "and" to clarify that the term "and mixtures thereof" refers to the first Markush group of photoconductive materials, and to place the second Markush group of selenium alloys in a closed format.

Claim 18 has been amended to clarify that the adhesive strength measurement of the reverse peel test corresponds to the adhesive strength of the "imaging member."

Claim 20 has been amended to delete the Markush group and to recite that the "support is rigid or flexible."

Accordingly, applicants respectfully request that the rejection for indefiniteness be withdrawn.

Claims 1-32 stand rejected under 35 U.S.C. § 112, second paragraph, as being incomplete for omitting essential elements. This rejection is respectfully traversed.

Claims 1, 25, and 31 have been amended to recite that the support comprises "an electrically conductive substrate." Support for this amendment is found in the specification at page 6, lines 9-10, page 6, line 31 to page 8, line 25, and page 21, lines 18-19.

Accordingly, applicants respectfully request that the rejection for omitting essential elements be withdrawn.

Claims 1-32 are rejected under 35 U.S.C. § 112, first paragraph, for lack of enablement. This rejection is respectfully traversed.

The Examiner has indicated that "[a]n electrically conductive substrate is critical or essential to the practice of the invention," and that the lack of this essential element in the claims renders the claims non-enabled. As already mentioned above, claims 1, 25, and

31 have been amended to recite that the support comprises "an electrically conductive substrate."

Accordingly, applicants respectfully request that the rejection for lack of enablement be withdrawn.

Claims 5, 17, and 31 are objected to for various informalities. The objections are respectfully traversed.

The Examiner asserts that the term "phthallic" has been misspelled in claims 5 and 31. Applicants respectfully disagree. "Phthallic" is the correct spelling of this term, as reflected in claim 5 and the specification at page 10, line 29. This objection is not relevant to claim 31, as this claim does not include the term "phthallic."

Claim 17 has been amended to delete the term "phthalocyanin" and substitute it with the correctly spelled term "phthalocyanine." Support for this amendment can be found in the specification at page 13, line 31.

For the foregoing reasons, applicants respectfully request that the objection to claims 5, 17, and 31 for various informalities be withdrawn.

Claims 1-14, 16, 20-24, 31, and 32 stand rejected under 35 U.S.C. § 103(a) for obviousness over U.S. Patent No. 5,686,215 to Bergfjord ("Bergfjord") as combined with U.S. Patent No. 4,595,602 to Schank ("Schank"), American Chemical Society (ACS) Registry No. 71519-80-7 ("ACS Registry No. 71519-80-7"), and U.S. Patent No. 5,084,526 to Harris ("Harris"). This rejection is respectfully traversed.

Bergfjord is cited as disclosing an electrophotographic imaging member comprising a flexible titanium-coated polyester web that is coated with a charge blocking layer, an adhesive layer comprising a polyester resin and a polyarylate resin, and a charge imaging layer. The Examiner has acknowledged that the adhesive layer of Bergfjord is substantively distinct from the interfacial adhesive layer of the present invention.

Schank is cited as teaching an overcoat layer for use in electrophotographic imaging members such as those described in Bergfjord. The overcoat layer is made of a cross-linked siloxanol-colloidal silica hybrid material. Schank further discloses a primer layer containing a 0.05 percent solution of an 80:20 weight ratio of poly(carbonate-co-ester) (i.e., GE 3250)/polymethyl methacrylate. This primer layer is applied to the imaging member to improve adhesion of the overcoat layer to the imaging member.

ACS Registry No. 71519-80-7 discloses the copolyester-poycarbonate resin used for the interfacial adhesive layer of the present invention. This resin is commonly referred to as LEXAN® 3250 or GE 3250.

Harris describes various miscible blends of polycarbonomides and polyarylate copolymers as useful in making such items as extruded sheets, high temperature connectors, injection molded articles, and thermoformable articles. The Examiner cites Harris as disclosing the chemical structure of LEXAN® 3250, which is used in the blends of Harris as a poly(arylate-carbonate) copolymer.

In support of this rejection, the Examiner has taken the position that it would have been obvious to one of ordinary skill in the art to coat the imaging member of Bergfjord with the primer (e.g., GE 3250) and overcoat layers described in Schank to yield the imaging member of the present invention. Applicants respectfully disagree. None of the references teaches or suggests the use of GE 3250 as an interfacial adhesive layer for an imaging member according to the present invention. Schank describes a process of applying the GE 3250 primer layer to the entire surface of an imaging member in order to enhance adhesion of the overcoat layer to the imaging member. In contrast, the interfacial adhesive layer of the present invention is applied between the charge generating and charge blocking layers of the imaging member. Further, Schank does not teach the use of the GE 3250 primer layer as a substitute for the interfacial adhesive layer of Bergfjord.

Accordingly, withdrawal of the record rejection of claims 1-14, 16, 20-24, 31, and 32 in view of Bergfjord as combined with Schank, ACS Registry No. 71519-80-7, and Harris is respectfully requested.

Claims 1-15, 17, 20-24, 31, and 32 are rejected under 35 U.S.C. § 103(a) for obviousness over U.S. Patent No. 5,418,100 to Yu ("Yu '100") combined with Schank, ACS Registry No. 71519-80-7, and Harris.

Yu '100 is cited as teaching an electrophotographic imaging member comprising a flexible titanium-coated polyester web that is coated with a charge blocking layer, an adhesive layer comprising a cross-linked copolyester resin, and a charge imaging layer. The Examiner has conceded that Yu '100 does not teach the interfacial adhesive layer of the present invention.

It is the Examiner's position that it would have been obvious to one of ordinary skill in the art to coat the imaging member of Yu '100 with the GE 3250 primer layer and overcoat layer of Schank to yield the imaging member of the present invention. As

stated above, Schank is limited to teaching that an overcoat layer may be applied to the surface of an imaging member. The GE 3250 primer layer is used in Schank to adhere the overcoat layer to the surface of the imaging member. Nowhere does Schank teach or suggest the use of the GE 3250 primer layer as an interfacial adhesive layer. Thus, Schank is clearly deficient as prior art against the imaging member of the present invention. Yu '100 cannot overcome these deficiencies of Schank, because nowhere does Yu '100 teach or suggest using the GE 3250 primer layer of Schank as an interfacial adhesive layer in an imaging member.

Accordingly, withdrawal of the record rejection of claims 1-15, 17, 20-24, 31, and 32 in view of Yu '100 as combined with Schank, ACS Registry No. 71519-80-7, and Harris is respectfully requested.

Claims 1-10, 14, 17, 18, 20-22, 31, and 32 are rejected under 35 U.S.C. § 103(a) for obviousness over Japanese Patent Publication No. 60-012552 ("Japanese Publication '552"), as evidenced by the corresponding Japanese Patent Office ("JPO") Abstract and the Derwent Abstract, combined with ACS Registry No. 71519-80-7, Harris, and U.S. Patent No. 5,660,961 to Yu ("Yu '961").

Japanese Publication '552, as clarified by the related JPO and Derwent Abstracts, describes an electrophotographic/photosensitive imaging plate comprising a conductive support, a charge generation layer, a charge transport layer, and an adhesive layer between the charge generation and charge transport layers. The adhesive layer is described as containing a thermoplastic polyester carbonate. The Examiner has acknowledged that Japanese Publication '552 does not disclose the use of a charge blocking layer.

Yu '961 teaches an electrophotographic imaging member having a substrate, a charge blocking layer, an optional adhesive interface layer, a charge generating layer, and a charge transport layer. The charge blocking layer contains solid, finely divided light scattering inorganic particles. The adhesive layer may be deposited between the charge blocking and charge generating layers.

The Examiner has taken the position that it would have been obvious to one of ordinary skill in the art to incorporate the charge blocking layer of Yu '961 in the imaging plate of Japanese Publication '552 to arrive at the imaging member of the present invention. However, in contrast to the teaching of Japanese Publication '552, the interfacial adhesive layer of the present invention is disposed between the charge blocking layer and the charge imaging layer. Although Yu '961 teaches depositing an adhesive layer between the charge

blocking and charge generating layers, it does not teach or suggest the copolyester-polycarbonate interfacial adhesive layer of the present invention. Instead, Yu '961 teaches away from the present invention, in that it teaches using the inferior DUPONT® 49,000-type resin as the adhesive layer. Thus, in contrast to the present invention, nowhere does Japanese Publication '552, ACS Registry No. 71519-80-7, Harris, or Yu '961 teach or suggest the use of the GE 3250 resin as an interfacial adhesive layer between the charge blocking layer and charge imaging layer of an electrophotographic imaging member.

Accordingly, withdrawal of the record rejection of claims 1-10, 14, 17, 18, 20-22, 31, and 32 in view of Japanese Publication '552, as evidenced by the corresponding JPO and Derwent Abstracts, as combined with ACS Registry No. 71519-80-7, Harris, and Yu '961, is respectfully requested.

From the foregoing, further and favorable action in the form of a Notice of Allowance is believed to be next in order, and such action is hereby earnestly solicited.

Respectfully submitted,

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